REMARKS

Reconsideration of the rejections set forth in the outstanding Office Action is respectfully requested. By this amendment, claims 2, 4, 10, and 16 have been canceled without prejudice or disclaimer and claims 1, 3, 5-6, 9, 11-15, and 19-20 have been amended. Currently, claims 1, 3, 5-9, 11-15, and 17-20 are pending in this application.

Rejection under 35 USC 102

Claims 1-20 were rejected under 35 USC 102(e) as anticipated by Dighe (U.S. Patent Application Publication No. 2002/0097725). This rejection is respectfully traversed in view of the amendments to the claims and the following arguments.

This application relates to a way to assign and allocate network resources to layer 1 Virtual Private Networks. A company that owns an optical network may not want to operate the network and may prefer to lease portions of the network to other companies that may then use the network themselves or operate a network on the leased portion of the network. (Specification at Page 2, lines 1-8). Although layer 2/3 VPNs are able to create tunnels through the network for particular customers, those customers don't actually obtain dedicated rights to the network resources for transmission of data associated with the VPN. Thus, the customers can't manage the underlying network elements to control how those network elements are operating. Rather, in Layer 2/3 VPNs, the customer relies on the network service provider to operate the network elements, and data for the customer is simply transferred by the service provider over the network elements on the customer's behalf.

Typically, traffic from a particular VPN will be mixed with other traffic and transmitted in common with the other traffic on the network. However, in some instances, the traffic for a particular VPN may occupy all of the resources for example all of the resources on a particular port. Regardless of how much bandwidth is occupied by the L2/L3 VPN, however, operation of the underlying network element continues to be the province of the service provider who is operating the network.

Dighe teaches a way to implement ATM VPNs on a communication network. As is well known, ATM operates at the link layer (Layer 2) of the OSI network stack rather than at the physical layer (Layer 1) of the network. Dighe allows multiple customers of a network owner to

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have ATM VPNs created which, stated another way, enables customers of the Internet Service provider to obtain Layer 2 VPN resources on demand.

In paragraph 5 of the specification, applicants explain how layer 2/3 VPNs may be created on a network. As noted in this paragraph, VPNs created this way do not actually obtain dedicated rights to the network resources for transmission of data associated with the VPN. Rather, the data is mixed together with other traffic and transmitted in common with the other traffic on the network.

Dighe, as pointed out by the Examiner, enables ATM circuits to be established on the network. From a certain point of view, an ATM circuit is a reservation of bandwidth and data resources that enables frames to be transmitted on the network. However, this ATM virtual circuit is set up over the physical layer of the network and the customer never gets control over the network elements. Rather, the customer simply reserves a right to have bandwidth that may be used to transmit data on the defined circuit through the network.

This distinction is central to how Dighe operates. Specifically, Dighe is looking for a way to enable multiple VPNs to share a given port (Dighe at Paragraph 35: "an ATM switch can be shared by multiple VPNs both at the switch level and at the port level."). To do this, Dighe proposes to insert a management layer (Port Resource Management Layer 2.1 – see fig. 2) between the control layer and the line cards. Within this layer, VPN specific Resource Modules (VPNRMs) are created to support the various VPNs. Additionally, a given VPN may have more than one VPNRM where more than one control protocol is to be supported by the VPN (Dighe at paragraph 60: "a single VPN can create multiple VNRMs on the same switch port, depending on its control protocol requirements...").

At paragraph 42, lines 4-8, Dighe explains that the port resource management layer is able to manage switching bandwidth, VPI/VCI space, input/output buffer space and local processing cycles that are required for cell-level scheduling. Thus, the switch itself remains under the control of the network operator, and the network operator uses the management layer to provision ATM VPNs for its network customers.

The port resource management layer thus does not allocate links on the network, but rather allocates space on the links to enable an ATM Virtual Circuit VCI/VPI to be established on the line card. As noted by applicants at paragraph 6 of the specification, layer 2 and 3 VPNs are not suitable for particular subscribers that may wish to exert control over the network

resources themselves. Thus, applicants were focused on a different space than Dighe, since applicants were focused on providing a way for network resources to be physically assigned to a particular customer (Specification at Paragraph 8), rather than enabling virtual circuits to be created/provisioned over the physical resources (Dighe at paragraphs 35-36).

Applicants have attempted to highlight the differences between this application and what is shown in Dighe. Of course, from a patentability standpoint, the question of whether the claim is patentable depends on the particular language used in the claim.

Applicants have amended claim 1 to recite a method of assigning and allocating network resources to Layer 1 Virtual Private Networks on a communication network. This distinguishes Dighe, since Dighe is not focused on assigning Layer 1 resources, but rather is focused on setting up Layer 2 ATM VPNs. Since this amendment appears in the preamble, applicants have made conforming amendments to the body of the claim to further clarify that the claim is focused on Layer 1, physical, resources. In the rejection, the Examiner indicated that Dighe disclosed a method of assigning network resources to L1-VPNs. However, the portions of Dighe cited by the Examiner (paragraphs 42 and 44) and the rest of Dighe, all relate to establishment of ATM VPNs which are not layer 1 VPNs as described above. Accordingly, applicants respectfully submit that Dighe does not teach or suggest claim 1 as amended and thus respectfully request that the Examiner withdraw the rejection of claim 1.

Independent claim 19 has been amended to recite the process described in the specification by which resources are first assigned to become dedicated, shared, or public LI-VPN resources, and then allocated on demand to subscribers. Dighe does not teach or suggest that physical resources should be assigned to particular customers, to particular groups of customers, or to be shared by all customers. Further, Dighe does not teach or suggest how the layer 1 resources should be allocated once a request for resources arrives. Accordingly, claim 19, as amended, is believed to be patentable over Dighe. Thus, withdrawal of the rejection of this claim is respectfully requested.

Conclusion

In view of foregoing claim amendments and remarks, it is respectfully submitted that the application is now in condition for allowance and an action to this effect is respectfully

requested. If there are any questions or concerns regarding the amendments or these remarks, the Examiner is requested to telephone the undersigned at the telephone number listed below.

Extension of time

Applicants request a two month extension of time to respond to the outstanding Office Action. Payment of the two month extension of time is being submitted concurrently herewith. If any fees are due in connection with this filing, the Commissioner is hereby authorized to charge payment of the fees associated with this communication or credit any overpayment to Deposit Account No. 141315 (Ref: 16716ROUS01U).

Respectfully Submitted

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